
Original Article

Mental health and wellbeing of jockeys

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ABSTRACT

Despite receiving much public attention in recent years, the mental health status of jockeys has not been established. This study investigated the incidence of common mental health disorders in jockeys. Amateur (n=74) and professional (n=42) jockeys completed an online anonymous questionnaire incorporating validated self-reported measurement tools to assess the prevalence of psychological distress, depression, anxiety, social phobia, perceived stress and self-esteem. Personal and lifestyle characteristics were also reported. Fifty four percent of jockeys were experiencing symptoms of at least one of general psychological distress, depression, general anxiety disorder or social anxiety. Professional jockeys displayed significantly greater mean scores on measures of psychological distress ($p<0.01$), depression ($p<0.05$), anxiety ($p<0.05$) and perceived stress ($p<0.01$). No difference was present in measures between professional flat and jump jockeys. Professional jockeys were classified as displaying symptoms of depression (mean score 20.29; 57.1% at or above threshold of 16) and perceived stress (mean score 20.24; 52.4% at or above threshold of 20). Current injury, social anxiety or high levels of perceived stress increased the likelihood of displaying depressive symptoms in the jockey sample. With a high prevalence of depression and perceived stress evident in professional jockeys, mental health support strategies should be implemented with specific focus on stress management and dealing with injury. Future research should further investigate factors that



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increase the susceptibility of jockeys to mental health disorders. **Keywords:** Weight category sports, Horse racing, Depression, Anxiety, Stress, Psychological health.

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INTRODUCTION

High-performance athletes have been reported to be at risk for mental health issues due to the intense mental and physical demands of being an athlete (Rice et al., 2016; Schinke, Stambulova, Si & Moore, 2017). One in two elite athletes have been suggested to be experiencing symptoms in at least one mental health issue inclusive of general psychological distress, generalised anxiety disorder, depression, social anxiety, eating disorder or panic disorder (Gulliver, Griffiths, Mackinnon, Batterham & Stanimirovic, 2015). Moreover, the prevalence of depressive symptoms are suggested to be equal if not greater in athletes than the general population (Gorczynski, Coyle & Gibson, 2017) with 47.8% of elite athletes reported to meet the cut-off for signs of anxiety/depression (Foskett & Longstaff, 2017). A significant correlation between higher levels of life stress and those experiencing depressive symptoms has been identified in elite athletes (Beable, Fulcher, Lee & Hamilton, 2017). Several unique challenges and stressors have been identified as potential risk factors in high performance athletes. These may include managing ongoing competitive pressure to perform, dealing with injury and recovery, involuntary career termination, pressures with increased public scrutiny and expectations, overtraining and burnout as well as limited support networks due to relocation (Beable et al., 2017; Rice et al., 2017).

Professional jockeys are a unique cohort of athletes who work exhaustive schedules and have an extremely demanding, competitive, dangerous and high-risk occupation (O'Connor, Warrington, McGoldrick & Cullen, 2017; Landolt et al., 2017; Wilson, Drust, Morton & Close, 2014). Uncommon to other sports, jockeys have the unique demand placed on them to not only remain in peak physical condition (Cullen et al., 2015) but to maintain a strict and often unrealistic weight, on a daily basis over a protracted racing season, in order to maximise riding opportunities which directly impacts on potential earnings (Wilson et al., 2014). Poor performance, high-performance expectations, travelling long distances, power relationships, constant public and employer scrutiny, maintaining weight and physical fitness, risk of injury, time demands, long working hours, workload, high levels of concentrations and ancillary demands including track work were previously identified as key occupational and lifestyle stressors in professional jockey's (Landolt et al., 2017).

Horse racing has previously been reported to be a physically demanding sport (Cullen et al., 2015) with significant lifestyle challenges and expectations placed on jockeys (Dolan et al., 2011; Landolt et al., 2017; Wilson et al., 2014), which in turn may impact on their mental health and wellbeing. Despite the well documented physical health and performance implications associated with jockey's (Dolan et al., 2012; Warrington et al., 2009; Wilson et al., 2014) research pertaining to the mental health and wellbeing of jockeys is limited. Jockeys have been reported to display abnormal mood profiles (Wilson et al., 2013) and significant mood disturbances and maladaptive behaviours and attitudes towards eating appear to be exacerbated in jockeys who continually undergo periods of rapid weight loss to ride at a light weight (Caulfield & Karageorghis, 2008). Despite recent personal disclosures within the media, there is a dearth of published research directly exploring the mental health and wellbeing of jockeys. The aim of this study therefore, was to investigate the prevalence and type of common mental health disorders in jockeys using validated self-reported symptoms questionnaires.

METHODS

Design and Participants

Cross-sectional analyses were performed to assess the prevalence of common mental health disorders among the jockey population. An anonymous online survey (Survey Monkey) was employed using validated self-reported measurement tools. All amateur and professional flat and jump jockeys in Ireland over the age

of 18 years and holding a racing license at the time of testing were encouraged to participate. Participants were recruited during the month of August through individual text messages distributed by the Irish Horseracing Regulatory Board, advertisements on racing authority websites, on social media and in racing related newspapers. Seventy-four amateur jockeys (32% response rate), 21 professional flat jockeys (36% response rate) and 21 professional jump jockeys (22% response rate) participated, with an overall response rate of 30%. Ethical approval was granted by the University ethics committee. A help line number was provided at the end of the study should any distress during completion have occurred.

Measures

Demographic and lifestyle characteristics data were collected including gender, age, education level reached, years holding a racing license, number of winners, relocation, difficulty making weight, frequency of weight cutting, past injury incidence and severity, current injury status, concussion incidence and severity. The psychological constructs investigated, and corresponding validated self-report questionnaire included:

- *Psychological distress* – Psychological distress was measured over the previous 4 weeks using the Kessler Psychological Distress Scale (K10) (Kessler et al., 2003). The internal consistency of the K10 in this study was acceptable (Cronbach $\alpha = 0.90$). The questionnaire included 10 items (e.g. in the past 4 weeks, how often did you feel tired for no good reason?) on a 5-point scale (1-none of the time to 5-all of the time). A total score ranging from 10 to 50 was obtained by summing up the answers on the 10 items. Higher scores indicated higher symptom levels and a score of 22 or more indicated symptoms of distress.
- *Depression* - The Center for Epidemiologic Studies Depression (CES-D) scale was used to measure symptoms of depression (Radloff, 1977). The internal consistency of the CES-D in this study was acceptable (Cronbach $\alpha = 0.94$). The questionnaire consisted of 20 items investigating how one felt or behaved in the previous week (e.g. I felt that everything I did was an effort). Responses were made on a 4-point scale (0-rarely or none of the time to 3-most or all of the time). The score received was the sum of the 20 questions with a possible range from 0-60, higher scores indicative of higher symptom levels. A score of 16 or more was considered as expression of symptoms of depression.
- *Anxiety* – Anxiety was assessed over the previous 2 weeks using the General Anxiety Disorder Questionnaire (GAD-7) (Spitzer, Kroenke, Williams & Lowe, 2006). The internal consistency of the GAD-7 questionnaire in this study was acceptable (Cronbach $\alpha = 0.88$). This questionnaire included 7 items (e.g. over the last 2 weeks, how often have you been not able to stop or control worrying?) on a 4-point scale (0-not at all to 3-nearly every day). The GAD-7 score was calculated by adding together the scores for the seven questions (range 0-21). Higher scores indicated higher symptom levels and a recommended threshold of 10 or greater suggested general anxiety disorder.
- *Social phobia* - The 17-item Social Phobia Inventory (SPIN) was the scale used to rate social anxiety over the past week (Connor et al., 2000) (e.g. during the past week, I avoid talking to people I don't know). The internal consistency of the SPIN questionnaire in this study was acceptable (Cronbach $\alpha = 0.95$). The 5-point scale (0-not at all to 4-extremely) resulted in a score ranging from 0-68 once answers were summed together. Higher scores indicated higher symptom levels and a score of 19 or more indicated social anxiety disorder.
- *Perceived stress* - Perceived stress was measured using the Perceived Stress Scale (PSS) (Cohen et al., 1988) which assessed feelings and thoughts over the past month using 10 questions (e.g. In the last month, how often have you felt that you were unable to control the important things in your life?). The internal consistency of the PSS questionnaire in this study was acceptable (Cronbach α

= 0.86). Responses were made on a 5-point scale (0-never to 4-very often). Scores for questions 4, 5, 7 and 8 were reversed and the sum of all questions resulted in a range of 0-40. Higher scores indicated higher perceived stress and a score of 20 or greater indicated perceived stress.

- *Self-esteem* - Rosenberg's Self-Esteem Scale (RSES) was used to assess self-esteem in the past six months (Rosenberg, 1965). The internal consistency of the RSES questionnaire in this study was acceptable (Cronbach α = 0.90). A total score ranging from 0 to 30 was obtained by summing up the answers on the 10 items (e.g. On a whole, I am satisfied with myself) on a 4-point scale (0-strongly agree to 3-strongly disagree). A score of 14 or less indicated the presence of adverse self-esteem.

Statistical analysis

All data were analysed using SPSS Statistics 22.0 (SPSS Inc. Chicago, Illinois USA). All items in the questionnaire needed to be complete to be eligible for analysis. Descriptive data analyses (mean (M), standard deviation (SD), frequency (n), and range) were performed for the different variables. T-tests were used to compare amateur and professional jockeys and ANOVA were used to identify differences between amateur, flat and jump jockeys. A binary logistic regression was performed to ascertain the effects of relocation, current and past injury, number of prior concussions, difficulty making weight, frequency of cutting weight, anxiety, social phobia, perceived stress, and self-esteem on participant's meeting the threshold for depression. All predictor variables were measured at the nominal or ordinal level. A significance level was set at alpha 0.05.

RESULTS

Participants and Lifestyle Characteristics

Participant characteristics are presented in Table 1. Seventy-six percent of all participants were male and 24% were female. Twenty eight percent of amateur jockeys and 35.7% of professional jockeys reported having difficulty making racing weights. Fifty percent of professional jockeys reported cutting weight up to 3 times per week (9.5% in amateur jockeys). In terms of injury status, 4.1% of amateur jockeys and 11.9% of professional jockeys were injured at the time of data collection with 67% and 60% of these amateur and professional jockeys, respectively, missing more than 3 months of racing. More than half the jockeys (amateur 64.9%; professional group 57.1%; professional flat 33.3%; professional jump 81%) reported having a previous injury. 24.3% of amateur jockeys reported having sustained at least one concussion with 26.3% of these being out of racing for more than 21 days. In contrast, 52.4% of professional jockeys reported at least one concussive episode, of which 40.9% missed more than 21 days of racing.

Table 1. Participant characteristics

	Amateur	Professional Group (Flat & Jump)	Professional Flat	Professional Jump
<i>n</i> (%)	74 (63.8)	42 (36.2)	21 (18.1)	21 (18.1)
Jockey response rate (%) (including only licensed jockeys over 18 years)	32	27	36	22
Age in years, <i>M</i> (<i>SD</i>)	25.7 (5.6)	25.14 (5.80)	23.5 (5.9)	26.8 (5.4)
Gender				
Male, <i>n</i> (%)	51 (68.9)	37 (88.1)	17 (81)	20 (95.2)
Female, <i>n</i> (%)	23 (31.1)	5 (11.9)	4 (19)	1 (4.8)

Highest education level reached				
Primary school, <i>n</i> (%)	0	2 (4.8)	1 (4.8)	1 (4.8)
Junior Certificate, <i>n</i> (%)	17 (23.0)	21 (50.0)	12 (57.1)	9 (42.9)
Leaving Certificate, <i>n</i> (%)	33 (44.6)	17 (38.1)	7 (33.3)	9 (42.9)
Third Level Education, <i>n</i> (%)	23 (31.1)	3 (7.1)	1 (4.8)	2 (9.5)
None	1 (1.4)	0	0	0
Years as a jockey, <i>M</i> (<i>SD</i>)	7.1 (5.1)	7.4 (6.16)	5.9 (6.1)	9.0 (6.0)
Number of winners, <i>M</i> (<i>SD</i>)	49 (152)	132 (231)	113 (239)	151 (226)
Range	0-1200	0-1000	0-1000	0-1000
Relocated for racing, <i>n</i> (%)	18 (24.3)	25 (59.5)	14 (66.7)	11 (52.4)

Prevalence of Symptoms of Mental Health Disorders

Table 2 presents mean symptom levels and the percentages of those exceeding the threshold (caseness) for each of the mental disorders. Just over half of the jockeys (54.3%) were experiencing at least one of general psychological distress, depression, general anxiety disorder or social anxiety, with more professional jockeys displaying symptoms for at least one mental health problem compared to amateur jockeys (76.2% versus 41.9%). Professional jockeys displayed significantly greater mean scores on measures of psychological distress ($p < 0.01$), depression ($p < 0.05$), anxiety ($p < 0.05$) and perceived stress ($p < 0.01$). According to the threshold, professional jockeys were classified as displaying symptoms of depression (mean score 20.29; cut off ≥ 16) and perceived stress (mean score 20.24; cut off ≥ 20). No significant differences were found in mean scores between professional flat and jump jockeys. Over half of professional jockeys met the established cut-off score (caseness) for depression (57.1%) and perceived stress measures (52.4%). Participants who had relocated for racing had significantly higher scores for psychological distress ($t = 2.064$, $p < .05$), depression ($t = 2.665$, $p < .01$) and perceived stress levels ($t = 3.616$, $p < .001$).

Table 2. Symptoms of mental health disorders

	Amateur (n=74)	Professional Group (Flat & Jump) (n=42)	Professional Flat (n=21)	Professional Jump (n=21)
<i>Symptom Measure (potential range)</i>				
K10 (10-50), <i>M</i> (<i>SD</i>)	17.26 (7.35) ^a	21.12 (7.33)	21.24 (8.69)	21.00 (5.87)
CES-D (0-60), <i>M</i> (<i>SD</i>)	14.41 (13.05) ^b	20.29 (12.39)	21.29 (11.64)	19.29 (13.30)
GAD-7 (0-21), <i>M</i> (<i>SD</i>)	4.12 (4.76) ^{b, c}	6.29 (1.17)	5.19 (3.54)	7.38 (5.05)
SPIN (0-68), <i>M</i> (<i>SD</i>)	13.26 (15.08)	15.95 (14.2)	13.38 (11.70)	18.52 (16.20)
PSS (0-40), <i>M</i> (<i>SD</i>)	15.38 (7.61) ^{a, c, d}	20.24 (7.31)	20.05 (6.06)	20.43 (8.52)
RSES (0-30), <i>M</i> (<i>SD</i>)	18.47 (6.13)	18.19 (6.47)	17.95 (6.70)	18.43 (6.38)
<i>Caseness cut-off (percentage meeting cut-off score)</i>				
K10 score ≥ 22 , <i>n</i> (%)	15 (20.3)	15 (35.7)	7 (33.3)	8 (38.1)
CES-D ≥ 16 , <i>n</i> (%)	24 (32.4)	24 (57.1)	12 (57.1)	12 (57.1)
GAD-7 ≥ 10 , <i>n</i> (%)	11 (14.9)	9 (21.4)	3 (14.3)	6 (28.6)
SPIN ≥ 19 , <i>n</i> (%)	20 (27.0)	16 (38.1)	7 (33.3)	9 (42.9)
PSS ≥ 20 , <i>n</i> (%)	19 (25.7)	22 (52.4)	10 (47.6)	12 (57.1)
RSES ≤ 14 , <i>n</i> (%)	20 (27.0)	13 (31.0)	8 (38.1)	5 (23.8)

Abbreviations: Kessler Psychological Distress Scale (K10); Center for Epidemiologic Studies Depression (CES-D); General Anxiety Disorder Questionnaire (GAD-7); Social Phobia Inventory (SPIN); Perceived Stress Scale (PSS); Rosenberg's Self-Esteem Scale (RSES). ^a $p < 0.01$ different to professional, ^b $p < 0.05$ different to professional, ^c $p < 0.05$ different to jump, ^d $p < 0.05$ different to flat.

Associations with Depression

The effects of relocation, current and past injury, number of prior concussions, difficulty making weight, frequency of cutting weight, anxiety, social phobia, perceived stress, and self-esteem on participant's meeting the threshold cut-offs for depression measured by the CES-D scale was determined. Psychological distress was considered as a predictor but was significantly associated with anxiety ($\Phi=.616$, $p<.001$), social phobia ($\Phi=.625$, $p<.001$) and stress ($\Phi=.675$, $p<.001$) and therefore excluded. The Chi-square logistic regression model was statistically significant, ($\chi^2(1) = 85.596$, $df=15$, $p<.001$) and the Hosmer-Lemeshow test indicated that the data fit the model well ($\chi^2=4.459$, $df=8$, $p=.813$). The model explained between 52.6% (Cox & Snell R^2) and 70.8% (Nagelkerke R^2) of the variance in depression and correctly classified 86.2% of cases. Current injury (Wald=8.140, $df=1$, $p=.004$), social phobia (Wald=6.126, $df=1$, $p=.013$) and perceived stress (Wald=8.756, $df=1$, $p=.003$) significantly contributed to the model. Those with a current injury were 46.42 (95% CI=3.324, 648.159) times more likely to report depression than those without a current injury. Being at or above the established threshold score for social phobia resulted in 6.82 times increase in the likelihood of reporting depression (95% CI=1.491, 31.191), and exceeding the threshold score for stress resulted in a 14.44 times increase in the likelihood of reporting depression (95% CI=.694, 17.610).

DISCUSSION

Results from this study suggest that over half of the respondents in this jockey sample were experiencing at least one mental health problem assessed. Professional jockeys are more likely to demonstrate negative mental health symptoms compared to amateur jockeys, with significantly greater mean scores on measures of psychological distress, depression, anxiety and perceived stress. One in every two professional jockeys were classified as meeting the established threshold score for depression and perceived stress. No difference exists in measures between professional flat and jump jockeys. Current injury, social anxiety or high levels of perceived stress increased the likelihood of displaying depressive symptoms in the jockey sample.

Using similar methodologies and the same validated questionnaires to a study on elite athletes (Gulliver et al., 2015), results of the current study reveal substantially higher symptom measures and prevalence in jockey's mental health disorders compared to other elite athletes. Furthermore, professional jockeys appeared to display a greater prevalence for psychological distress (35.7%), depression (57.1%), generalised anxiety disorder (21.4%) and social phobia (38.1%) in comparison to amateur jockeys (20.3%; 32.4%; 14.9%; 27% respectively) as well as other elite athletes (16.5%; 27.2%; 7.1%; 14.7% respectively) (Gulliver et al., 2015). Identification of all potential factors attributing to the prevalence of mental health disorders in jockeys, specifically professional jockeys, is yet to be established.

More than half of professional jockeys (57%) were classified as displaying symptoms of depression compared to 32.4% of amateur jockeys. Mean score for depression was below the threshold indicative of depression in amateur jockeys (14.4) compared to a significantly higher mean score of 20.3 in professional jockeys. While it has been previously indicated that high-performance athletes are at risk for mental health problems (Rice et al., 2016), the incidence of jockeys displaying depressive symptoms, in particular professional jockeys, appear to be substantially higher than what is seen in other athletes (Beable et al., 2017; Gulliver et al., 2015). Comparison to elite athletes in Australia who used the same survey and cut-off reported a mean score of 11.6 with 27.2% displaying symptoms of depression (Gulliver et al., 2015). Additionally, 21% of high performance athletes assessed in New Zealand reported symptoms consistent with depression (Beable et al., 2017). Using a different questionnaire (General Health Questionnaire, GHQ), 47.8% of elite athletes in the United Kingdom were reported as meeting the cut-off for signs of anxiety and depression, however these psychological constructs were not separated, limiting comparison with this study (Foskett & Longstaff, 2017).

In a recent comparative meta-analysis in high-performance athletes, rates of depressive symptoms have been reported to range from 3.7%-26.7% and 9.8%-36.5% for males and females respectively (Gorczyński et al., 2017). Female high-performance athletes were reported as twice as likely to report depressive symptoms compared to male high-performance athletes (Gorczyński et al., 2017). The majority of jockeys surveyed in this study were male jockeys, 76% were male and 24% were female, of which only 12% of professional jockeys surveyed were females. Since females are in the minority in horse racing and all athletes are treated equally and must race in the same races, females and males were combined for analysis as numbers would be too low in females to interpret alone. Results for non-athletes have been reported with ranges for men between 7.6%-34.4% and females 6.1%-42.5% (Gorczyński et al., 2017). These results highlight the incidence of depressive symptoms prevalent in professional jockeys is substantially higher than not just amateur jockeys and other athletes, but non-athletes too.

While the rate of depressive symptoms amongst elite athletes has been identified (Beable et al., 2017; Gouttebauge, Kerkhoffs & Lambert, 2016; Gulliver et al., 2015), the identification of potential causal factors remains limited. A recent study highlighted a significant correlation between higher levels of life stress and those experiencing depressive symptoms (Beable et al., 2017). In the current study, perceived stress was reporting as increasing the likelihood of displaying depressive symptoms in jockeys with those reporting perceived stress 14 times more likely to report depressive symptoms too. This study suggests professional jockeys display significantly higher perceived stress levels than amateur jockeys. Over half of professional jockeys met the caseness threshold for perceived stress measures. Understanding the factors that precipitate and contribute to this increase in stress is vitally important. Professional jockeys work exhaustive schedules with long working hours and a high workload with a large proportion experiencing stress in relation to financial circumstances (Landolt et al., 2017), with the potential also for over training (Main, Dawson & Grive, 2009). Professional horse racing has long racing seasons, with the jockeys fully engrained in the industry and relying on each race ride to bring in financial support. Poor performance, high-performance expectations, constant public and employer scrutiny, maintaining weight and physical fitness and risk of injury may all be exacerbating the stress levels in professional jockeys (Landolt et al., 2017). While no comparative data on daily stressors apparent in amateur racing are available, amateur racing has a defined racing season with many jockeys having other occupations outside of racing as they are not paid to ride in each race. This is highlighted in the higher level of education completed by amateur jockeys, and reduced incidence of relocating for a career in racing. Results show relocation for racing results in significantly higher scores for psychological distress, perceived stress and depression. It could be suggested the lifestyle of a professional jockey is more indicative of daily life stressors that may exacerbate perceived stress levels which appear to be associated with higher levels of depressive symptoms reported. In addition to future monitoring of jockeys working and racing schedules, formalised intervention strategies should be developed to help jockeys manage life stressors and allow jockeys to develop an identity outside of the racing community.

Injury has been identified as a major stressor for athletes and one that can pose significant challenges (Putukian, 2017). This is worrying in such a high risk and dangerous sport where falls and injuries occur frequently and unpredictably (O'Connor et al., 2017). Those jockeys with an injury were 46 times more likely to display depressive symptoms compared to those without an injury. More than half the jockeys in this study reported having a previous injury. Duration of injury may be a high-risk factor for depression and mental health issues (Mainwaring, Hutchison, Bisschop, Comper & Richards, 2010) which is worrying when jockeys are exposed to such serious injuries which may keep them out of racing for long durations of time. Evidence suggests that sport-related concussions might be connected to depression if improperly managed (Kontos, Deitrick & Reynolds, 2016). While results of this study did not find any association between depression and incidence of concussion, further research is required given the prevalence of concussions occurring in race

day jockey falls (O'Connor et al., 2017). It has been suggested that a useful approach to monitor depressive symptoms and associations with injuries and concussions would be to use depression symptoms checklists (e.g. CES-D) during baseline concussion assessments and again with athletes who sustain an injury (Appaneal, Levine, Perna & Roh, 2009).

Previous research has suggested an association between eating disorders and depression (Bauman, 2016). In attempts to reduce weight for racing, negative attitudes toward dietary intake have been suggested to make jockeys susceptible to developing maladaptive behaviours and vulnerable to eating disorders (Caulfield & Karageorghis, 2008). Disordered eating behaviours, including fasting and purging, have been reported in jockeys (Dolan et al., 2011; Wilson et al., 2014). Given that 50% of professional jockeys reported cutting weight up to 3 times per week compared to only 9.5% of amateur jockeys, it may be suggested that professional jockeys are required to employ disordered eating behaviours more frequently than their amateur counterparts. Difficulty making weight or the frequency of cutting weight were not identified as predictors of depression in this study and cannot be used as an explanation for the reported depressive symptoms in professional jockeys. Further research is required to investigate the impact of making weight and engaging in disordered eating behaviours on a regular basis on long-term mental health in light of the disordered eating behaviours and attitudes towards food reported (Caulfield & Karageorghis, 2008).

While to the best of the author's knowledge, this is the first study to investigate the mental health and wellbeing status of jockeys, the study is not without its limitations. An overall response rate of 30% was secured from licensed jockeys over 18 years of age which was comparative to a similar study on elite athletes in Australia (25.1%) (Gulliver et al., 2015) and also male professional football players (29%) (Gouttebarger et al., 2016). It is possible however that jockeys more prone to mental health problems may have been more likely to participate, therefore leading to a biased sample. The overall questionnaire length took 20-30 minutes to complete which potentially resulted in many respondents failing to complete the survey. Incomplete responses to the survey were excluded from the final analysis which may have influenced the overall results. Non-response analysis was not possible due to participant selection blinded to the researchers. The sample includes jockeys from all racing disciplines, with a range of ages, years holding a license and number of winners, all of which indicate a representative sample of the jockey population. Validated questionnaires were used to identify self-reported symptoms, therefore only indications of a likely or probable mental disorder is represented.

CONCLUSION

The results of this study show a growing emphasis on the need to provide specific and targeted support to address the mental health needs of jockeys. The stigma attached to mental health issues in athletes (Bauman, 2016) may potentially be highlighted in jockeys due to many factors including the drive to be successful, expectations of others, financial gain/loss and a multitude of media outlets that glorify those who succeed and are critical of those who fail. It is therefore important to raise jockeys' awareness, and that of other support staff (Gulliver et al., 2012), of mental health issues that may occur during a racing career. Widespread mental health support prevention programmes to assist in improving the mental well-being of jockeys should be implemented with particular focus on monitoring changes in specific observable behaviours, stress management and dealing with injury. Future research should focus on identifying factors that increase the susceptibility of jockeys to mental health disorders as well as factors that could have a protective function, ultimately providing a framework for future psychological interventions.

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